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Conference Abstract

The “Key” to Bringing DNA Collections to the Next Level: A DiSSCo Flanders Working Group Product

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Abstract

The DiSSCo (Distributed System of Scientific Collections) Flanders consortium, with one of the set goals being "maturing" (i.e., optimizing the management of) and unlocking (i.e., publishing) their DNA collections, identified 1) the need for actively sharing best practices on the management of DNA collections; and 2) a need for guidance on how to bring theory into practice.

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During the DiSSCo Flanders project, a DNA collection working group was created. The working group is open to all biodiversity-related DNA collections associates in Belgium, including those in diverse roles such as researchers, lab technicians, collection managers and data managers. Around 50 people from 13 organizations are currently participating. Members can be passively (reading only) or actively (joining events) engaged.

The strength, as well as one of the challenges, of the DiSSCo Flanders community is that the natural science collections are created and managed in different organizational contexts: universities, museum institutes and both governmental and non-governmental research organizations. This translates to a variety of collection management decisions and structures such as: decentralized or centralized; cold or room temperature storage; managed by an appointed curator or by a lab technician.

The working group organizes meetings and workshops, tours of each other's collections, and shares a mailing list and an online document space. As its principal output, the group has co-created: “The key to bringing DNA collections to the next level” (Veltjen et al. 2024) with two main results: the "Challenges" and the “Key”.

The "Challenges" is a list of 23 challenges applicable to DNA collection management. For example, challenge 8: "Select or customise collection management systems to meet the needs of DNA collections". They are intended to spark debate and give focus to the second output: the "Key."

The "Key" lists seven yes/no questions:

1. Do you have an up-to-date overview of all direct, internal stakeholders of the institute’s DNA collection and are you involving them in the (current) intent to “bring the DNA collection to the next level”?
2. Is preserving a DNA collection within the scope of the institute? And is the DNA collection officially recognized within the institute?
3. Do you have, on paper, a clear description of the scope of the DNA collection?
4. Have you outlined the current overarching workflow of the DNA collection?
5. Have you been able to establish your starting level on the "DNA collection maturation chart" and is the assessment properly logged?
6. Level up, one level at a time, and log the process. Have you reached all of the goals in level 3 on the "DNA collection maturation chart"?
7. Do you have a re-evaluation strategy for your DNA collection?

The "DNA collection maturation chart" has 11 categories (rows), three levels (columns) and 33 goals (see Table 1 in Veltjen et al. 2024). The Key provides 18 guidance

chapters, which give in depth information, literature and user experiences (Suppl. material 2 in Veltjen et al. 2024).

The Key is a specialized tool for DNA collections. It facilitates a standardized and holistic approach, allowing both a helicopter view of the maturation process and close-up view of specific goals. The working group aims to test the Key, whereby the process of "leveling up" is embedded in a community setting: sharing ambitions, setbacks, changes of plans and success stories.

The output is ready in its first version. It is published as a reviewable publication, allowing post-publication peer review (Veltjen et al. 2024). The works are expected to evolve through time, depending on user feedback and user experiences.

The working group and co-created output are positive examples of how a local community—sometimes managing smaller, or less conspicuous types of natural science collections—can work together and use their unique perspectives, experiences and needs to contribute to the international natural science collection and biobanking communities.

Keywords

best practices, biodiversity biobank, molecular collection, community collaboration, collection management tool

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Conflicts of interest

The authors have declared that no competing interests exist.

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